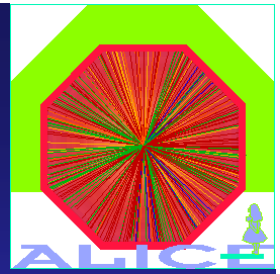
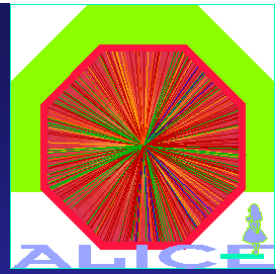


RICH calibration and alignment status

K. Shileev



Disclaimer:

CDB is primarily for reconstruction so here presented only things needed for reconstruction, for simulation we need just everything.

What affects what ?

- C_6F_{14} Ref. Idx. $\rightarrow$ ring radius (AliRICHRecon)
- CH_4 Ref. Idx. $\rightarrow$ ring radius (AliRICHRecon)
- CH_4 gain $\rightarrow$ MIP charge cut (AliRICHTracker)
- QE $\rightarrow$ photon cluster weight (AliRICHRecon partly imp.)
- Dead map $\rightarrow$ the same as above (to be implemented)
- Pedestals $\rightarrow$ if we want to reapply sigma cut (to be implemented)

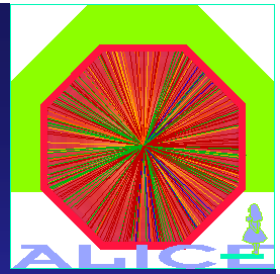
External info sources

Param.	Where	Freq.	Go to CDB?	Freq.
P, T for CH_4 (7)	DCS	One per minute	Yes	Not def
O_2, H_2O in CH_4	DCS	one per minute	No	
HV (42)	DCS	One per minute	Yes	Not def
LV	DCS	One per minute	No	
Ped-Tres-Dead map (2*161280)	DAQ	2 per day	Yes	2 per day
Trans SiO2	DCDB	One per minute	No	
Trans C_6F1_4	DCS	One per minute	No	
T C_6F_{14} (42)	DCS	One per minute	Yes	Not def
CsI QE	DCDB	Once forever	Yes	once
Gain map	DCDB	Test beam	??	??

AliRICHRunParam

- P,T for CH_4 applied to each chamber
- T for C6F14: mean value stored; applied for each radiator
- HV: applied to each sector
- 7 objects like “RICH/TPHV/Ch1”
- Used by AliRICHParam
- Not known how to write (DCS)

AliRICHQE



- Segmentation corresponding to UV scanner
- 4x4 pads per point
- Stored just once
- Used by AliRICHParam
- 7 spices like “RICH/QE/Ch1”
- Not known how to write (DCDB)

AliRICHPedestal

- Heaviest object
- Stored 2 times per day
- 7 objects “RICH/Pedestal/Ch1”
- Used by AliRICHParam
- Contains pedestal and threshold
- Reserved value for dead channel (-1)
- Known how to produce
- This might be centralized operation?

AliRICHGainMap

- Only recalculated object
- Takes statistics
- Not implemented
- Strategy how to use (with respect to HV) not yet settled

Alignment

- Chambers are rigid
- Only alignable object is chamber as a whole
- Survey stores ref points

AliRICHSurvey

- Format not yet fixed
- 7 objects “RICH/Survey/Ch1”
- Used to create initial AliRICHChamber

AliRICHChamber

- Contains all geometrical information
- Provides all transformations needed
- 7 objects like “RICH/Align/Ch1”

Alignment procedure for translation

- Trivial as we have external reference (ESD tracks)

Alignment procedure for rotation

- Use diff versus Pt plots
- Diff is Mip position minus track intersection
- For tilting use x diff
- For inclination use y diff
- For 2 chambers not yet fully tested